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Claims 1-14

1. A method for the deposition of an ink jet printable composition, to a substrate comprising:

depositing an ink composition on a substrate by ink jet printing;

wherein said composition comprises:

(a) functional material;

(b) organic polymer comprising polyvinylpyrrolidone; dispersed in

(c) dispersion vehicle selected from organic solvent, water, or mixtures thereof;

and wherein the viscosity of said composition is between 5 mPa.s to 50 mPa.s at a temperature of 25 to 35°C.

2. The method of Claim 1 further comprising the step of firing said ink jet printable composition and substrate.

3. The method of Claim 1 wherein said substrate is treated to change its surface tension.

4. The method of Claim 1 wherein said substrate is selected from glass, ceramic, or plastic.

5. The method of Claim 1 wherein said composition further comprises up to 10 wt% inorganic resinate.

6. The method of Claim 5 wherein said inorganic resinate is silver resinate or a mixture of metal resinates.

7. The method of Claim 1 wherein said functional material is a conductive functional material.

8. The method of Claim 1 wherein said organic polymer is further comprised of other polymers selected from the group comprising polymethacylates and polyacrylates.

9. The method of Claim 1 wherein said composition further comprises a monomer wherein said monomer is ultraviolet curable or thermally curable.

10. The composition of Claim 9 wherein said monomer is selected from the group comprising triethylolpropane ethoxy triacrylate, trimethylolpropane triacrylate, pentaerythritol triacrylate, pentaaerythritol trimethacrylate, trimethylolpropane trimethyacrylate, pentaerythritol tetraacrylate, pentaerythritol tetramethacrylate, triethylene glycol diacrylate, triethylene glycol dimethacrylate, polyoxyethylated trimethylol-propane triacrylate, ethylated pentaerythritol triacrylate, dipentaerythritol monohydroxypentaacrylate and 1,10-decanediol dimethlacrylate.

11. The method of Claim 1 wherein said functional material is present in the range of 1-60 wt.%, based on total composition.

12. The method of Claim 1 wherein said organic polymer is present in the range of 1-10 wt.%, based on total composition.

13. The method of Claim 1 wherein said dispersion vehicle is present in the range of 40-95 wt.%, based on total composition.

14. The method of Claim 9 further comprising a photoinitiator.

15. The method of Claim 1 wherein said organic solvent is selected from aliphatic alcohols, esters of aliphatic alcohols, terpenes, ethylene glycol, esters of ethylene glycol, carbitol esters or mixtures thereof.

2-pyrrolidone, n-methyl-2-pyrrolidone, n-ethyl-pyrrolidone, n-vinylpyrrolidone, 1,3-dimethyl-imidazolidone, dimethylacetamide as well as dimethylformamide or their mixtures.

16. Preparations in accordance with claims 1 to 15 containing
a) 0.05 to 80 weight %, preferably 0.1 to 30 weight %, particularly preferably 0.5 to 20 weight % at least of one oxide of element a), related to the preparation,
b) 0.1 to 200 weight %, preferably 0.5 to 100 weight % and especially 1 to 20 weight % dispersing agent of element b), related to the adopted oxide amount of a),
c) 10 to 98 weight %, in particular 20 to 98 weight %, solvents of element c) related to the preparation.

17. Technique for the application of pressure ink from ternary oxides of element a) with a median particle size of 1 to 100 nm with the ink jet technique to structured areas on a glass plate or another transparent high-melting polymeric mount.

18. Technique according to claim 17, whereby after the deposition of the pressure ink on a surface, a subsequent sintering of the imprinted substrate in a reducing atmosphere (preferably an argon/hydrogen gas mixture) at temperatures from 150 to 600°C, producing transparent electrically conductive layers

19. Technique according to claim 17, whereby after deposition of the pressure ink on a polymeric mount, the temperature required for sintering the particles is provided by a suitable laser or by a hot air stream.